$$C_D = \begin{cases} C_{D0}\left(1 - \frac{{}_b\mathrm{Ri}_B}{1+c|\mathrm{Ri}_B|^{1/2}}\right), & \mathrm{Ri}_B < 0 \\ C_{D0}\frac{1}{(1+b'\mathrm{Ri}_B)^2}, & \mathrm{Ri}_B \geq 0 \end{cases}$$

$$C_{d0} = \left(\frac{k}{\ln(z/z_0)}\right)^2,\ b = 9.4,\ b' = 4.7, c = 69.5 C_d \left(\frac{z}{z_0}\right)^{1/2},$$

$$\mathrm{Ri}_B \equiv \frac{gz(\theta_s - \theta_{z=0})}{\overline{\theta} u(z)^2}.$$